

## Background Paper Series



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# A profile of the North West province: Demographics, poverty, inequality and unemployment

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# PROVIDE

## PROJECT

The Provincial Decision-making Enabling Project

### Overview

The Provincial Decision-Making Enabling (PROVIDE) Project aims to facilitate policy design by supplying policymakers with provincial and national level quantitative policy information. The project entails the development of a series of databases (in the format of Social Accounting Matrices) for use in Computable General Equilibrium models.

The National and Provincial Departments of Agriculture are the stakeholders and funders of the PROVIDE Project. The research team is located at Elsenburg in the Western Cape.

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# **A profile of the North West province: Demographics, poverty, inequality and unemployment<sup>1</sup>**

## **Abstract**

*This paper forms part of a series of papers that present profiles of South Africa's provinces, with a specific focus on key demographic statistics, poverty and inequality estimates, and estimates of unemployment. In this volume comparative statistics are presented for agricultural and non-agricultural households, as well as households from different racial groups, locations (metropolitan, urban and rural areas) and district municipalities of the North West. Most of the data presented are drawn from the Income and Expenditure Survey of 2000 and the Labour Force Survey of September 2000, while some comparative populations statistics are extracted from the National Census of 2001 (Statistics South Africa). The papers should be regarded as general guidelines to (agricultural) policymakers as to the current socio-economic situation in the North West, particularly with regards to poverty, inequality and unemployment.*

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<sup>1</sup> The main author of this paper is Kalie Pauw.

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## 1. Introduction

According to the National Census of 2001 the North West province is home to 8.2% of South Africa's population. Measured by its total current income, the North West has fifth highest total income of the provinces in South Africa. In *per capita* income terms, however, the province only ranks seventh (SSA, 2003a).<sup>2</sup> As is the case with most of the other provinces in South Africa, the North West is marred by high poverty rates, inequalities in the distribution of income between various population subgroups, and unemployment. Poverty and unemployment in South Africa are often rural phenomena, and given that many of the rural inhabitants are linked to agricultural activities, the various Departments of Agriculture in South Africa have an important role to play in addressing the needs in rural areas. In this paper an overview of the demographics, poverty, inequality and unemployment in the North West is presented. A strong focus on agriculture and agricultural households is maintained throughout.

There are various sources of demographic data available in South Africa. In addition to the National Census of 2001 (SSA, 2003a), Statistics South Africa conducts a variety of regular surveys. Most suited to this type of study and fairly recent is the Income and Expenditure Survey of 2000 (IES 2000) (SSA, 2002a), which is a source of detailed income and expenditure statistics of households and household members. The twice-yearly Labour Force Survey (LFS) is an important source of employment and labour income data. In this paper we use the LFS September 2000 (LFS 2000:2) (SSA, 2002b) as this survey can be merged with the IES 2000. Although there are some concerns about the reliability of the IES and LFS datasets, whether merged or used separately, as well as the comparability of these with other datasets, one should attempt to work with it as it remains the most recent comprehensive source of household income, employment and expenditure information in South Africa. For a detailed description of the data, as well as data problems and data adjustments made to the version of the dataset used in this paper, refer to PROVIDE (2005a).

This paper is organised as follows. Section 2 presents a brief overview of the spatial distribution of households within the province, while also presenting some estimates of the number of people or households involved in agricultural activities. Section 3 focuses on poverty, inequality and unemployment in the province, while section 4 draws some general conclusions.

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<sup>2</sup> These population figures and income estimates are based on the Census 2001. Statistics South Africa warns that the question simply asked about individual income without probing about informal income, income from profits, income in kind etc. As a result they believe this figure may be a misrepresentation of the true income. Comparative figures from the IES 2000 ranks the North West sixth both in terms of total provincial income and *per capita* income.

## 2. Demographics

### 2.1. Spatial distribution of households

In 2000 the North West was home to 794,352 households and a total of 3.58 million people (IES/LFS 2000). These estimates are slightly lower than the Census 2001 estimates of 929,004 households (3.67 million people, see Table 1). The discrepancy is partly explained by the population growth experienced between 2000 and 2001, but also points to the outdated IES/LFS 2000 sampling weights.<sup>3</sup> Compared to the Census 2001 data African and Coloured people were slightly over-represented while Asian and especially White people were under-represented in the IES/LFS 2000.

Table 1: Racial composition of the North West

	<i>IES/LFS 2000</i>	<i>Population share</i>	<i>Census 2001</i>	<i>Population share</i>
African	3,296,487	92.0%	3,358,450	91.5%
Coloured	66,139	1.8%	56,960	1.6%
Asian/Indian	7,482	0.2%	9,904	0.3%
White	211,752	5.9%	244,036	6.7%
<i>Total</i>	<i>3,581,860</i>	<i>100.0%</i>	<i>3,669,350</i>	<i>100.0%</i>

Sources: IES/LFS 2000 and Census 2001.

The North West is divided into five district municipalities (see Figure 1), namely Kgalagadi, Bophirima, Central, Bojanala and Southern. Kgalagadi is one of only a few 'transfrontier' district municipalities in South Africa, i.e. it spans across a provincial boundary. None of the municipal districts or cities in the North West has metropolitan status; hence all urban areas are either classified as small cities or towns.<sup>4</sup> Kgalagadi and parts of Bojanala were previously part of the former homeland Bophuthatswana. These district municipalities were recently demarcated as directed by the Local Government Municipal Structures Act (1998).<sup>5</sup>

<sup>3</sup> The IES 2000 sampling weights were based on 1996 population estimates.

<sup>4</sup> Officially the Demarcation Board declared Pretoria (Tshwane), Johannesburg, East Rand (Ekurhuleni), Durban (eThekweni), Cape Town and Port Elizabeth (Nelson Mandela) as metropolitan areas. However, in our definition of metropolitan areas we include the Vaal (Emfuleni), East London, Pietermaritzburg and Bloemfontein (which includes Botshabelo).

<sup>5</sup> See PROVIDE (2005b) for a more detailed discussion of geographical distinctions between households based on former homelands areas, metropolitan areas, and nodal areas for rural development programmes, all of which can be linked to municipal districts.

Figure 1: District municipalities in the North West



Source: Demarcation Board ([www.demarcation.org.za](http://www.demarcation.org.za)).

Table 2 shows the number of people in each district municipality by racial group. Bojanala is the largest with 40.2% of the North West population residing here. This is likely due to its proximity to the large metropolitan areas around Pretoria and Johannesburg. This is followed by the Central region (28.5%), Southern (11.6%), Kgalagadi (10.2%) and Bophirima (9.5%). The latter is the largest district municipality in terms of area size. About 92.0% of the population are classified as African. White people make up 5.9% of the population, while 1.8% are Coloured. There are very few Asian people (0.2%), and they only live in Bojanala and the Southern district, both of which are close to Pretoria and Johannesburg.

Table 2: Population by district municipality and racial group

	<i>African</i>	<i>Coloured</i>	<i>Asian</i>	<i>White</i>	<i>Total</i>	<i>Percentages</i>
Kgalagadi (tf)	365,407				365,407	10.2%
Bophirima	316,450	17,885		4,244	338,579	9.5%
Central	948,464	9,774		63,986	1,022,225	28.5%
Bojanala	1,263,301	36,058	4,680	135,674	1,439,713	40.2%
Southern	402,865	2,422	2,802	7,848	415,937	11.6%
<i>Total</i>	<i>3,296,487</i>	<i>66,139</i>	<i>7,482</i>	<i>211,752</i>	<i>3,581,861</i>	
<i>Percentages</i>	<i>92.0%</i>	<i>1.8%</i>	<i>0.2%</i>	<i>5.9%</i>		<i>100.0%</i>

Source: IES/LFS 2000

Table 3 shows the number of people in urban and rural areas. Although most Coloured, Asian and White people live in urban areas, the majority of Africans live in rural areas. Since the province has a very large African population the overall urban-rural split is 39.4% versus 60.6%. The proportion is exactly the opposite of the national average 63-37 urban-rural split.

Table 3: Population by urban/rural areas and racial group

	<i>African</i>	<i>Coloured</i>	<i>Asian</i>	<i>White</i>	<i>Total</i>	<i>Percentages</i>
Secondary/small towns	1,166,117	59,839	7,482	177,502	1,410,941	39.4%
Rural areas	2,130,369	6,300		34,250	2,170,919	60.6%
<i>Total</i>	<i>3,296,487</i>	<i>66,139</i>	<i>7,482</i>	<i>211,752</i>	<i>3,581,860</i>	

Source: IES/LFS 2000

## 2.2. Agricultural households

The IES 2000 is one of the only sources of information on home production for home consumption (HPHC) in South Africa, and reports specifically on the productive activities of small, non-commercial subsistence farmers. Respondents were asked to provide estimates of production levels (livestock and produce), as well as the value of goods consumed and sold (see PROVIDE, 2005a for a discussion). This is potentially an important information source to measure the contribution of informal agricultural activities to poor households' income. On the formal side, employment data, which is available in the IES/LFS 2000, can be used to link households to agriculture. Workers reported both the industry in which they were employed as well as their occupation code.

Statistics South Africa has no formal definition of agricultural households, and hence two definitions are used here, namely a broad definition and a strict definition. Both definitions use a combination of HPHC data and agricultural employment data. Under the broad definition any household that earns income from either formal employment in the agricultural industry or as a skilled agricultural worker, or from sales or consumption of home produce or livestock, is defined as an agricultural household.<sup>6</sup> Under the strict definition a household has to earn at least 50% of its household-level income from formal and/or informal agricultural activities. A further way to 'qualify' as an agricultural household is when the value of consumption of own produce and livestock is at least 50% of total annual food expenditure.

Approximately 90,725 households (11.4%) in the North West are involved in HPHC, somewhat less than the national average of 19.3%. This figure includes 86,992 African households, 348 Coloured households and 3,385 White households. In contrast to this about 62,537 households (7.9%) earn some share of their income from wages of household members working in agricultural-related industries. The majority of these (58,646) of these households are African, while 460 are Coloured and 3,430 are White households. Income differences between these households suggest that the White households are typically the owners or managers of farms, with incomes averaging R190,909. African and Coloured

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<sup>6</sup> Note that consumption of own produce or livestock in economic terms can be regarded as an 'income' in the sense that the household 'buys' the goods from itself. If the household did not consume the goods it could have been sold in the market. This treatment of home-consumed production captures the notion of opportunity cost in economics.



households typically supply farm labour, with average household incomes of R11,625 and R13,049, respectively. When combining households in own production and agricultural employment, a total of 143,249 households (18.0%) in the North West can broadly be defined as agricultural households. Note that some of these households ‘qualify’ as agricultural households on both own production and employment accounts, which is why the figures do not add up. Under the strict definition 69,856 households (8.8%) are defined as agricultural households (see Table 4).

Table 4: Agricultural households by race (broad and strict definitions)

	<i>Broad definition</i>		<i>Strict definition</i>		
	<i>Agricultural households (column percentages)</i>	<i>Non-agricultural households (column percentages)</i>	<i>Agricultural households (column percentages)</i>	<i>Non-agricultural households (column percentages)</i>	<i>Total (column percentages)</i>
African	137,210 (95.8%)	598,513 (91.9%)	65,838 (94.2%)	669,885 (92.5%)	735,723 (92.6%)
Coloured	809 (0.6%)	9,251 (1.4%)	239 (0.3%)	9,821 (1.4%)	10,060 (1.3%)
Asian		1,383 (0.2%)		1,383 (0.2%)	1,383 (0.2%)
White	5,229 (3.7%)	41,956 (6.4%)	3,779 (5.4%)	43,407 (6.0%)	47,185 (5.9%)
<i>Total</i>	143,249 (100.0%)	651,103 (100.0%)	69,856 (100.0%)	724,496 (100.0%)	794,352 (100.0%)
<i>Row percentages</i>	18.0%	82.0%	8.8%	91.2%	100.0%

Source: IES/LFS 2000

The average household size of agricultural households in the North West ranges from 4.2 (strict) to 4.7 (broad), which is slightly less than the provincial average of 3.7 members. This means that the provincial share of people living in agricultural households is more than the share of households defined as agricultural. Table 5 shows that between 352,562 and 803,326 people live in agricultural households, representing 9.8% and 22.4% of the provincial population respectively. About 97,402 people in the North West are classified as agricultural workers, loosely defined here as skilled agriculture workers and/or people working in the agricultural industry, either in an informal or formal capacity, and reporting a positive wage for 2000. This figure represents 11.0% of the North West’s workforce.

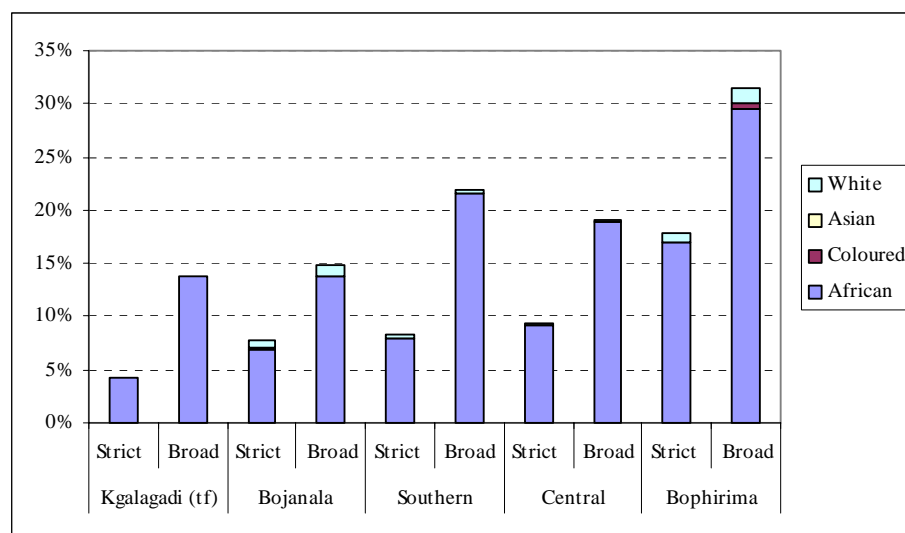
Table 5: Agricultural population by race (broad and strict definitions)

	<i>Population living in agricultural households (broad)</i>		<i>Population living in agricultural households (strict)</i>		<i>Population defined as agricultural workers</i>	
		<i>Percentages</i>		<i>Percentages</i>		<i>Percentages</i>
African	773,195	(96.2%)	331,187	(93.9%)	90,330	(92.7%)
Coloured	4,801	(0.6%)	2,073	(0.6%)	818	(0.8%)
Asian	-	(0.0%)	-	(0.0%)	-	(0.0%)
White	25,330	(3.2%)	19,303	(5.5%)	6,254	(6.4%)
<i>Total</i>	<i>803,326</i>	<i>(100.0%)</i>	<i>352,562</i>	<i>(100.0%)</i>	<i>97,402</i>	<i>(100.0%)</i>

Source: IES/LFS 2000.

Figure 2 shows, for each region, the proportion of households that are strictly or broadly defined as agricultural households. In this figure municipal districts are ranked from lowest to highest strict agricultural household share. The figure also provides a racial breakdown of agricultural households. By far the majority of agricultural households are African (compare Table 4). Bophirima has the largest share of agricultural households (17.9% - 31.5%), while Kgalagadi has the lowest (4.3% - 13.7%). The agricultural household shares in the other regions all range from around 7.8% to 21.9%. What is interesting to note is the relatively large gap between the strict and expanded definitions, which suggests that for many broadly defined agricultural households agricultural activities do not represent an important source of income.

Figure 2: Agricultural household shares by region and race



Source: IES/LFS 2000

### 3. Poverty, inequality and unemployment

In 2003 the North West contributed approximately 6.5% to the National GDP, although 8.2% of the South African population live in this province (SSA, 2003a, 2003b).<sup>7</sup> This implies that the *per capita* GDP in the North West is lower than the national average. According to the IES/LFS 2000 estimate the North West *per capita* income was R10,568 in 2000, slightly less than the national average of R12,411.

Table 6 shows the average household incomes (not *per capita*) by various subgroups in the North West. Although some of these averages are based on very few observations, which often lead to large standard errors, the table gives a general idea of how income is distributed between household groups in the province. The average household in the North West earned R37,287 in 2000 (not shown in the table). White agricultural households in general earn more than their non-agricultural counterparts, but the same is not true of African and Coloured agricultural households. Note that in all the figures and tables that follow agricultural households are defined according to the strict definition. On average agricultural household reported an income of R54,907 compared to R35,588 for non-agricultural households. The relatively high income figure for agricultural households is clearly skewed by the exceptionally high income levels reported by White households. Coloured agricultural households are worst off, earning on average only R6,000 per annum compared to R22,287 earned by African households. White agricultural households earned substantially more (R626,363). Note that these figures are household-level income figures that are potentially made up of income earned by multiple household members. As such it is not necessarily a reflection of wages of agricultural and non-agricultural workers.

Table 6: Average household incomes in the North West

	Agricultural households					Non-agricultural households				
	African	Coloured	Asian	White	Total	African	Coloured	Asian	White	Total
Kgalagadi (tf)	21,043				21,043	25,130				25,130
Bophirima	21,429			2,965,361	162,532	16,300	60,963		43,356	19,658
Central	17,382			265,777	22,111	30,503	45,264		111,816	35,647
Bojanala	29,431	6,000		196,884	45,759	32,534	36,341	146,627	128,389	41,203
Southern	15,552			1,070,725	51,531	21,141	7,052	85,980	433,671	31,514
<i>Provincial average</i>	<i>22,287</i>	<i>6,000</i>		<i>626,363</i>	<i>54,907</i>	<i>28,887</i>	<i>44,273</i>	<i>128,933</i>	<i>134,064</i>	<i>35,588</i>
<i>National average</i>	<i>15,014</i>	<i>24,250</i>	<i>132,816</i>	<i>282,151</i>	<i>26,612</i>	<i>29,777</i>	<i>57,284</i>	<i>88,642</i>	<i>166,100</i>	<i>49,990</i>

#### 3.1. Poverty and agriculture

Table 6 shows that Coloured and African agricultural households are generally worse off than their non-agricultural counterparts in terms of income levels. Agricultural households often

<sup>7</sup> Other provinces: Western Cape (14.5%), Eastern Cape (8.1%), Northern Cape (2.4%), Free State (5.5%), KwaZulu-Natal (16.5%), Gauteng (33.0%), Mpumalanga (7.0%) and Limpopo (6.5%).

reside in rural areas and are far removed from more lucrative employment opportunities in urban areas. As a result the National Department of Agriculture places strong emphasis on rural poverty reduction. Various strategies are proposed in the official policy documentation (see Department of Agriculture, 1998). Central to these strategies are (1) an improvement in rural infrastructure, with the aim of giving rural or resource-poor farmers better access to markets, transport, water and electricity, and (2) employment opportunities within agriculture for the poor. The latter can be interpreted either as the creation of employment opportunities within the commercial farming sector by encouraging commercial farmers to increase employment levels or the creation of new business opportunities for small farmers through a process of land restitution.

Various absolute and relative poverty lines are used in South Africa. In recent years the 40<sup>th</sup> percentile cut-off point of adult equivalent per capita income has become quite a popular poverty line.<sup>8</sup> This was equal to R5,057 per annum in 2000 (IES/LFS 2000). This relates to a poverty headcount ratio (defined as the proportion of the population living below the poverty line) for South Africa of 49.8% (IES/LFS 2000).<sup>9</sup> The 20<sup>th</sup> percentile cut-off of adult equivalent income (R2,717 per annum) is sometimes used as the ‘ultra-poverty line’. About 28.2% of the South African population lives below this poverty line.

These same national poverty lines are used for the provincial analysis as this allows for comparisons of poverty across provinces. The North West poverty rate of 52.2% is marginally higher than the national average, while the ultra-poverty rate is 27.6%. Figure 3 compares poverty rates for various population subgroups (race, municipality, location and agricultural/non-agricultural households). The subgroups are ranked from lowest to highest poverty rates for easy comparison. The upper and lower bands on the graph represent the 95% confidence intervals.

Bojanala (42.0%) has the lowest poverty rate in the North West, followed by Kgalagadi (45.4%). These are the only two regions with poverty rates below the national average. The Central region has a slightly higher poverty rate (53.4%), and the poverty estimate then shoots up to 71.7% in the Southern district and 75.3% in Bophirima.

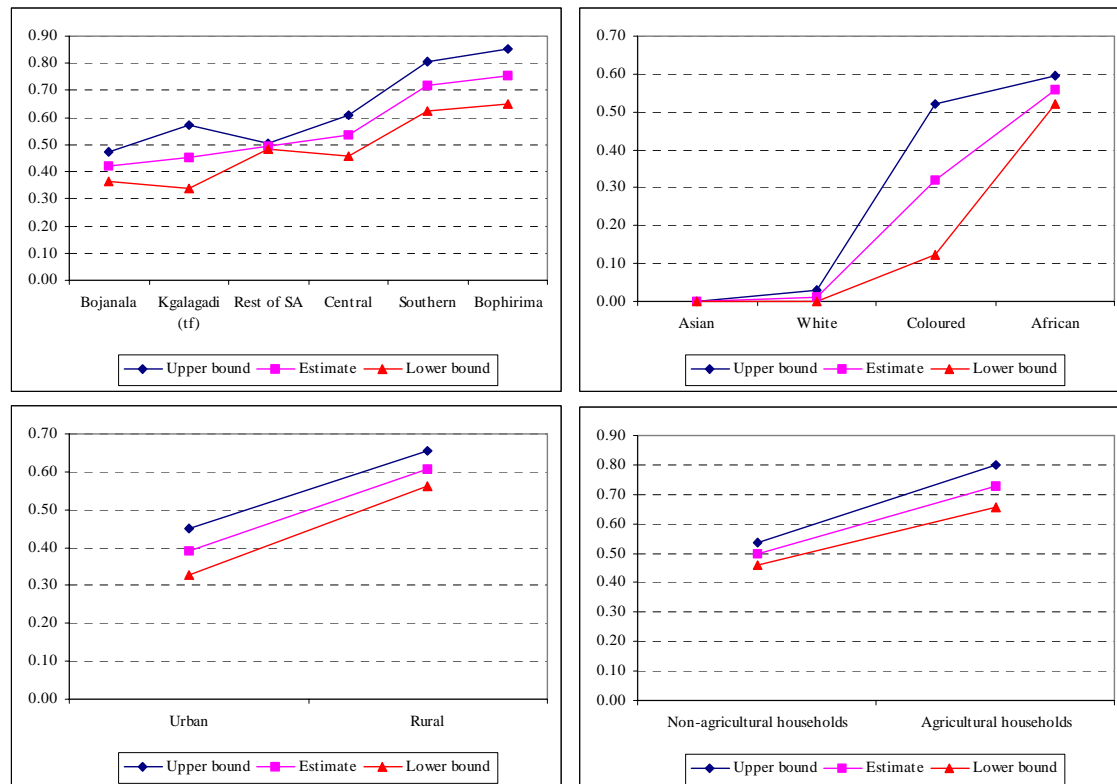
Poverty rates vary greatly between racial groups. There is virtually no poverty among White and Asian people. In sharp contrast about 32.1% of Coloured people are classified as poor. The confidence interval around this interval is, however, very wide due to the limited

<sup>8</sup> The adult equivalent household size variable,  $E$ , is calculated as  $E = (A + \alpha K)^\theta$ , with  $A$  the number of adults per household and  $K$  the number of children under the age of 10. In this paper the parameters  $\alpha$  and  $\theta$  are set equal to 0.5 and 0.9 respectively (following May *et al.*, 1995 and others).

<sup>9</sup> The poverty headcount ratio is usually calculated using the Foster-Greer-Thorbecke class of decomposable poverty measures (see PROVIDE, 2003 for a discussion). Poverty measures were also calculated to determine the depth and severity of poverty, but we do not report on these in this paper.

number of observations. An estimated 56.0% of Africans live in poverty. Poverty is also more pronounced in rural areas, where 60.7% of people live in poverty, compared 39.0% in urban areas. Finally, a comparison of agricultural and non-agricultural households reveals that a larger proportion of agricultural people are poor (72.8% compared to 49.9%). Some interesting comparisons between poverty and unemployment rates are drawn later in the paper (see section 3.3).

Figure 3: Poverty rates by population subgroups

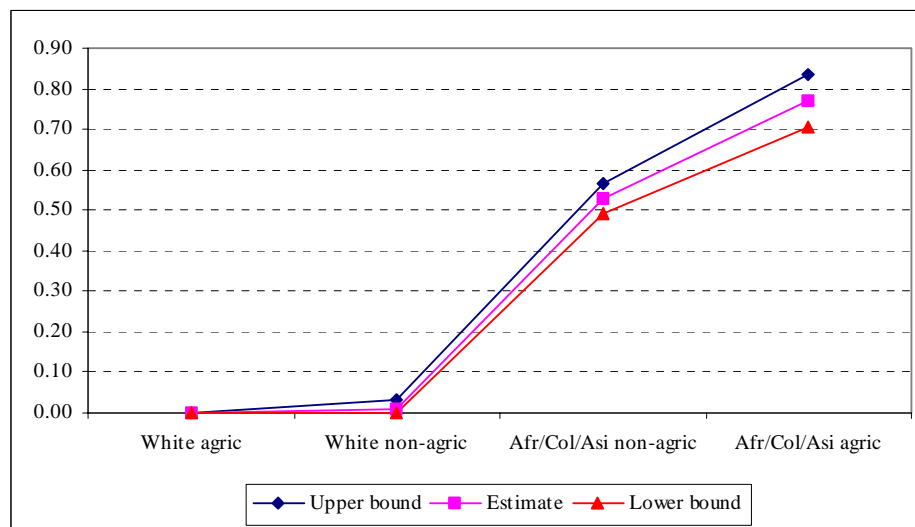


Source: IES/LFS 2000

Note: The poverty headcount ratios show the proportion of *people* living in poverty and not the proportion of *households*.

Section 3.2 explores the distribution of income in the North West. The inequality that exists in the North West, and particularly between racial groups within agriculture, is reflected in the poverty rates shown in Figure 4. Virtually none of the White agricultural and non-agricultural population is poor compared to 53.0% of the Coloured/African/Asian non-agricultural population. However, even more disadvantaged is the Coloured/African agricultural population with a poverty rate of 77.1%.

Figure 4: Poverty rates by race and agricultural/non-agricultural population

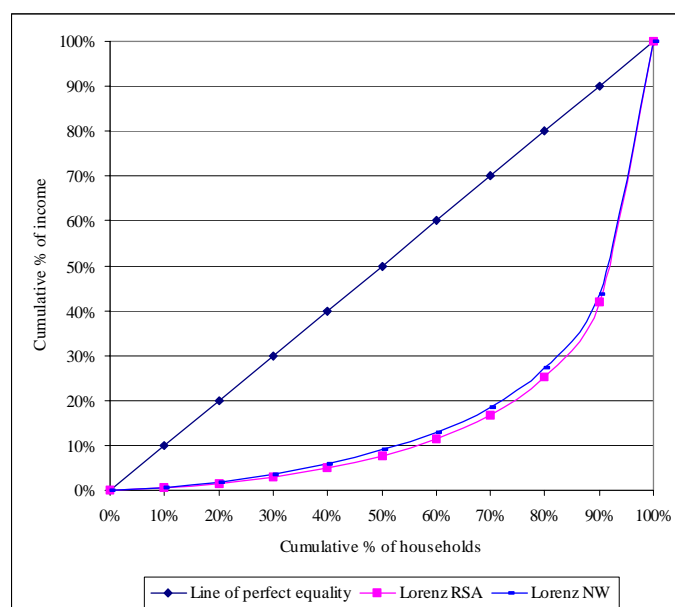


Source: IES/LFS 2000

### 3.2. Inequality in the distribution of income

Although income levels in the North West province are fairly low, policymakers are also interested in how the income is distributed among the population. Various income distribution or inequality measures exist in the literature (see PROVIDE, 2003 for an overview). One approach to measuring inequality is using Lorenz curves. A Lorenz curve plots the cumulative share of households against the cumulative share of income that accrues to those households. In a society where income is perfectly distributed the Lorenz curve is a straight line. When the income distribution is unequal, the Lorenz curve will lie below the 'line of perfect equality'. Figure 5 shows that the North West Lorenz curve is always above the South African Lorenz curve, which suggests that income is distributed more equally in this province than in the rest of the country.

Figure 5: Lorenz curves for the North West and South Africa



Source: IES/LFS 2000

The Gini coefficient is perhaps the best known inequality measure and can be derived from the Lorenz curve (see PROVIDE, 2003). Mathematically the Gini coefficient varies between zero and one, although in reality values usually range between 0.20 and 0.30 for countries with a low degree of inequality and between 0.50 and 0.70 for countries with highly unequal income distributions. Table 7 shows the Gini coefficients for various groups of countries. Clearly South Africa's Gini coefficient, estimated at about 0.69 (IES/LFS 2000), is very high.

Table 7: Trends in income distribution – 1960 and 1980

Group of Countries	Gini coefficient: 1960	Gini coefficient: 1980
All non-communist developing countries	0.544	0.602
Low-income countries	0.407	0.450
Middle-income, non-oil-exporting countries	0.603	0.569
Oil-exporting countries	0.575	0.612
Gini coefficient: South Africa (1995)*	0.64	
Gini coefficient: South Africa (2000)*	0.70	

Source: Adelman (1986) cited in Todaro (1997).

Note (\*): Author's calculations based on IES 1995 and IES/LFS 2000. Unfortunately not much can be read into the apparent increase in inequality since the data sources are not necessarily comparable.

As expected the North West's Gini coefficient of 0.68 (IES/LFS 2000) is lower than the national Gini coefficient. A useful decomposition technique can be used to identify the sources of inequality. From the IES/LFS 2000 a number of household income sources can be identified, namely income from labour (*inclab*), gross operating surplus (*incgos*), and transfers from households (*inctrans*), corporations (*inccorp*) and government (*incgov*). Total household

income (*totinc*) is thus defined as  $totinc = inclab + incgos + inctrans + inccorp + incgov$ . McDonald *et al.* (1999) show how the Gini coefficient can be decomposed into elements measuring the inequality in the distribution of these income components. Consider the following equation:

$$G = \sum_{k=1}^K \left\{ \left[ \frac{\text{cov}(y_k, F(y))}{\text{cov}(y_k, F(y_k))} \right] \left[ \frac{2 \text{cov}(y_k, F(y_k))}{\mu_k} \right] \left[ \frac{\mu_k}{\mu} \right] \right\} = \sum_{k=1}^K R_k G_k S_k$$

The index  $k$  represents the income sources.  $S_k$  is the share of the  $k^{\text{th}}$  income source in total income,  $G_k$  is the Gini coefficient measuring the inequality in the distribution of income component  $k$  and  $R_k$  is the Gini correlation of income from source  $k$  with total income (see Leibbrandt *et al.*, 2001). The larger the product of these three components, the greater the contribution of income source  $k$  to total inequality as measured by  $G$ .  $S_k$  and  $G_k$  are always positive and less than one, while  $R_k$  can fall anywhere in the range  $[-1,1]$  since it shows how income from source  $k$  is correlated with total income.

Table 8 decomposes the Gini coefficient of the North West. It also gives decompositions for subgroups by race and agricultural households. A clear pattern that emerges for all the subgroups is a very high correlation between the overall Gini and the Gini within income component *inclab*. Furthermore, *inclab* typically accounts for between 61% and 74% of total income of the various sub-groups evaluated here, except for agricultural households, where *inclab* only contributes 43% to total income. Consequently, it is not surprising to note that most of the inequality is driven by inequalities in the distribution of labour income. As far as agricultural households are concerned the picture looks very different. Inequality here is driven most by inequality in the distribution of *incgos* (42%). Income from gross operating surplus can be interpreted as returns to physical and human capital, and, in an agricultural context, the returns to land owned by the agricultural household.

These results suggest that inequalities within agricultural households are driven to some extent by inequalities in the distribution of wages, but more so by inequalities in the ownership of capital stock and land. It is also clear from previous tables in this discussion that the main source of inequality is inequality between White agricultural farm owners and landless African/Coloured agricultural households that supply labour services. Land reform programmes may therefore be very successful at improving incomes of poor agricultural households.<sup>10</sup>

<sup>10</sup> The difference between *inclab* and *incgos* in an agricultural context is problematic. Since the owners of farms are self-employed income earned is reported under *incgos*, which is a reflection of the return to physical capital stock and human capital (hence sometimes referred to as ‘mixed’ income). Simkins (2003) notes large changes in the levels of *incgos* and *inclab* between IES 1995 and IES 2000 (*incgos* fell significantly, while *inclab* increased), an indication that *incgos* is possibly underreported due to confusion that may exist among respondents as to where incomes should be reported.



Table 8: Gini decomposition by race and agriculture in the North West

	All households							
	<i>Rk</i>	<i>Gk</i>	<i>Sk</i>	<i>RkGkSk</i>				
<i>inclab</i>	0.95	0.76	0.70	0.50				
<i>incgos</i>	0.90	0.98	0.09	0.08				
<i>inctrans</i>	0.28	0.85	0.05	0.01				
<i>inccorp</i>	0.90	0.99	0.07	0.07				
<i>incgov</i>	0.26	0.79	0.08	0.02				
				0.68				
	African/Coloured/Asian households				White households			
	<i>Rk</i>	<i>Gk</i>	<i>Sk</i>	<i>RkGkSk</i>	<i>Rk</i>	<i>Gk</i>	<i>Sk</i>	<i>RkGkSk</i>
<i>inclab</i>	0.94	0.74	0.74	0.52	0.85	0.48	0.61	0.25
<i>incgos</i>	0.73	0.96	0.04	0.03	0.94	0.98	0.20	0.19
<i>inctrans</i>	0.28	0.84	0.07	0.02	0.07	0.94	0.01	0.00
<i>inccorp</i>	0.81	0.98	0.04	0.03	0.85	0.96	0.15	0.12
<i>incgov</i>	0.24	0.78	0.10	0.02	-0.01	0.91	0.02	0.00
				0.62				0.56
	Agricultural households				Non-agricultural households			
	<i>Rk</i>	<i>Gk</i>	<i>Sk</i>	<i>RkGkSk</i>	<i>Rk</i>	<i>Gk</i>	<i>Sk</i>	<i>RkGkSk</i>
<i>inclab</i>	0.96	0.81	0.43	0.34	0.95	0.75	0.74	0.53
<i>incgos</i>	1.00	1.00	0.42	0.42	0.73	0.96	0.04	0.03
<i>inctrans</i>	0.32	0.80	0.02	0.01	0.27	0.85	0.06	0.01
<i>inccorp</i>	0.95	0.99	0.09	0.08	0.88	0.99	0.07	0.06
<i>incgov</i>	0.28	0.73	0.04	0.01	0.25	0.80	0.08	0.02
				0.85				0.65

Source: Author's calculations, IES/LFS 2000

The Gini coefficients suggest that inequality among agricultural households (0.85, with a confidence interval of [0.75, 0.89]) is higher than inequality among non-agricultural households (0.65, with a confidence interval of [0.64, 0.66]). These confidence intervals also do not overlap, which strengthens the belief that inequality is higher among non-agricultural households. An alternative measure of inequality, the Theil index, is very different from other inequality measures. It is derived from the notion of entropy in information theory (see PROVIDE, 2003). The Theil inequality measure for agricultural households is 2.57 [1.40, 2.92] compared to 0.91 [0.84, 0.96] for non-agricultural households, which confirms the previous result.

These findings raise some interesting questions. Clearly income inequality among agricultural households is a concern. Land restitution has been placed at the top of the government's agenda to correct inequalities in South Africa. Although similar economic empowerment processes are in place in non-agricultural sectors, the process of agricultural land restitution has been highly politicised. The question is will more equality among agricultural households necessarily impact on the overall inequality in the North West? This question can be answered by decomposing the Theil inequality measure into a measure of inequality within a population subgroup and a measure of inequality between population

subgroups. The Theil inequality measure ( $T$ ) for the North West population as a whole is 0.81. This figure can be decomposed as follows (see Leibbrandt *et al.*, 2001):

$$T = T_B + \sum_{i=1}^n q_i T_i$$

The component  $T_B$  is the between-group contribution and is calculated in the same way as  $T$  but assumes that all incomes within a group are equal.  $T_i$  is the Theil inequality measure within the  $i^{\text{th}}$  group, while  $q_i$  is the weight attached to each within-group inequality measure. The weight can either be the proportion of income accruing to the  $i^{\text{th}}$  group or the proportion of the population falling within that group. Table 9 shows the results of a Theil decomposition using income and population weights with agricultural- and non-agricultural households as subgroups.<sup>11</sup> The between-group component contributes only 0.01 (0.6%) to overall inequality. Inequality among agricultural households contributes 0.33 (29.3%) or 0.26 (23.7%) to overall inequality, while non-agricultural households contribute 0.80 (70.1%) or 0.82 (75.7%) to overall inequality in the North West, depending on the weights used. These results suggest that a correction of inequalities within agriculture will certainly reduce inequality in the province as a whole, but despite having a lower inequality most of the inequality is driven by inequalities among non-agricultural households.

Table 9: Theil decomposition – agricultural and non-agricultural households

<i>Income weights</i>	$q_i$	$T_i$	$\sum_{i=1}^n q_i T_i$	$T_B$	$T = T_B + \sum_{i=1}^n q_i T_i$
Agricultural households	0.13	2.57	0.33		
Non-agricultural households	0.87	0.91	0.80		
<i>Sum</i>			<i>1.13</i>	<i>0.01</i>	<i>1.13</i>
<i>Population weights</i>					
Agricultural households	0.10	2.57	0.26		
Non-agricultural households	0.90	0.91	0.82		
<i>Sum</i>			<i>1.08</i>	<i>0.01</i>	<i>1.09</i>

Source: Author's calculations, IES/LFS 2000

Note: The different decomposition techniques do not necessarily lead to the same overall Theil index.

### 3.3. Employment levels and unemployment

There are approximately 888,630 workers in the North West (IES/LFS 2000).<sup>12</sup> Statistics South Africa distinguishes between eleven main occupation groups in their surveys. These

<sup>11</sup> The income weight for agricultural households is the total income to agricultural households expressed as a share of total income of all households in the province. The population weight for agricultural households is expressed as the share of the population living in agricultural households (see Table 2 and Table 5).

<sup>12</sup> 'Workers' are defined here as those people that report a positive wage for 2000. People who were unemployed at the time of the survey but who have earned some income during the previous year will therefore be captured here as workers. In the unemployment figures reported later the *current* status of workers is reported, irrespective of income earned. Employment figures reported here are therefore higher than the official employment figures.

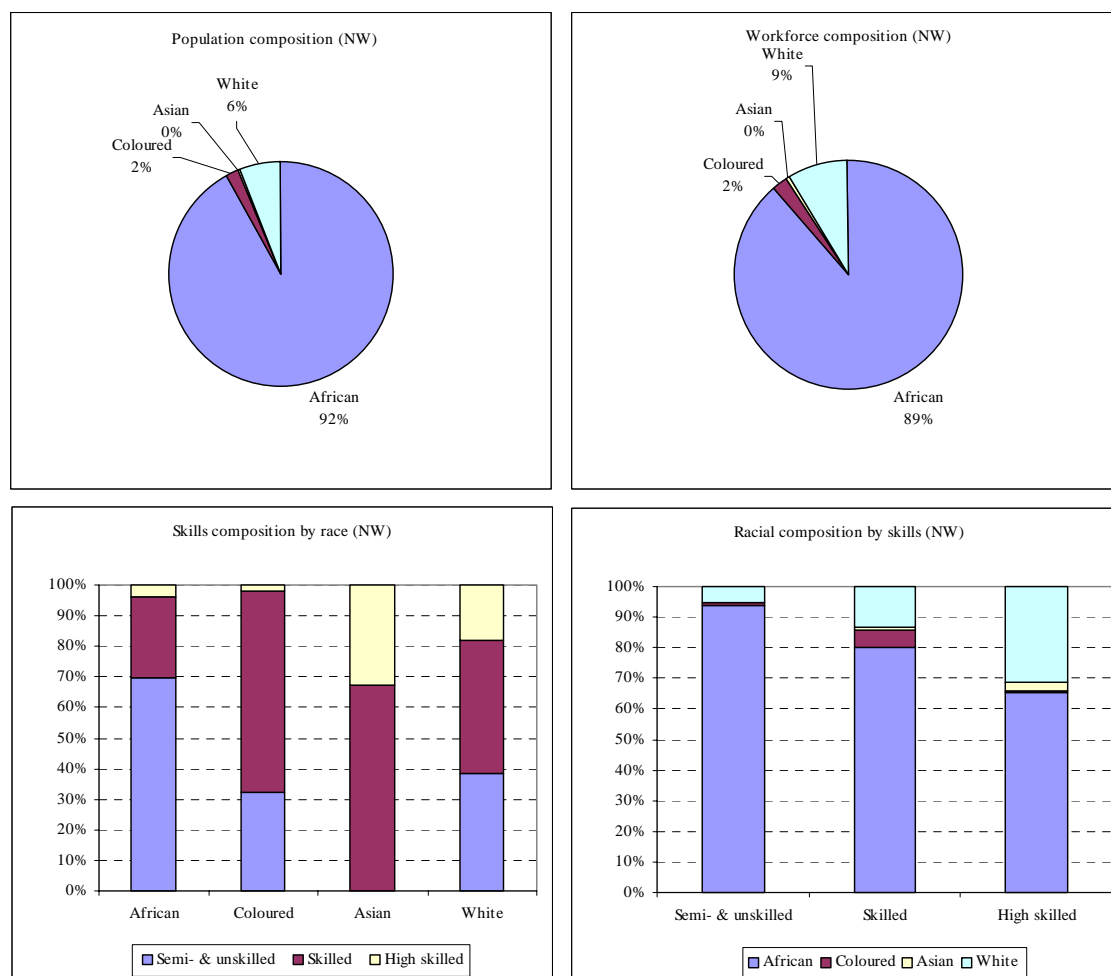
include (1) legislators, senior officials and managers; (2) professionals; (3) technical and associate professionals; (4) clerks; (5) service workers and shop and market sales workers; (6) skilled agricultural and fishery workers; (7) craft and related trades workers; (8) plant and machine operators and assemblers; (9) elementary occupations; (10) domestic workers; and (11) not adequately or elsewhere defined, unspecified.

For simplification purposes the occupation groups are aggregated into various skill groups, namely high skilled (1 – 2), skilled (3 – 5), and semi- and unskilled (6 – 10).<sup>13</sup> Figure 6 explores the racial composition of the workforce by race and skill and compares these figures with the provincial racial composition. The overall racial distribution of the workforce is fairly similar to the racial composition of the province, although African workers are slightly underrepresented. The picture becomes clearer when disaggregating further by skill. African workers are typically found in the lower-skilled occupation groups, while White workers are more concentrated around the skilled and high-skilled occupations. The limited number of Asian and Coloured workers in the North West make it difficult to draw conclusions about their skills distribution. Clearly much still needs to be done in the North West to bring the racial composition of the workforce more in line with the provincial-level population composition at all skills levels.

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<sup>13</sup> Unspecified workers (code 11) are not included in a specific skill category since the highly dispersed average wage data suggests that these factors may in reality be distributed across the range of skill categories.

Figure 6: Racial representation in the workforce of the North West



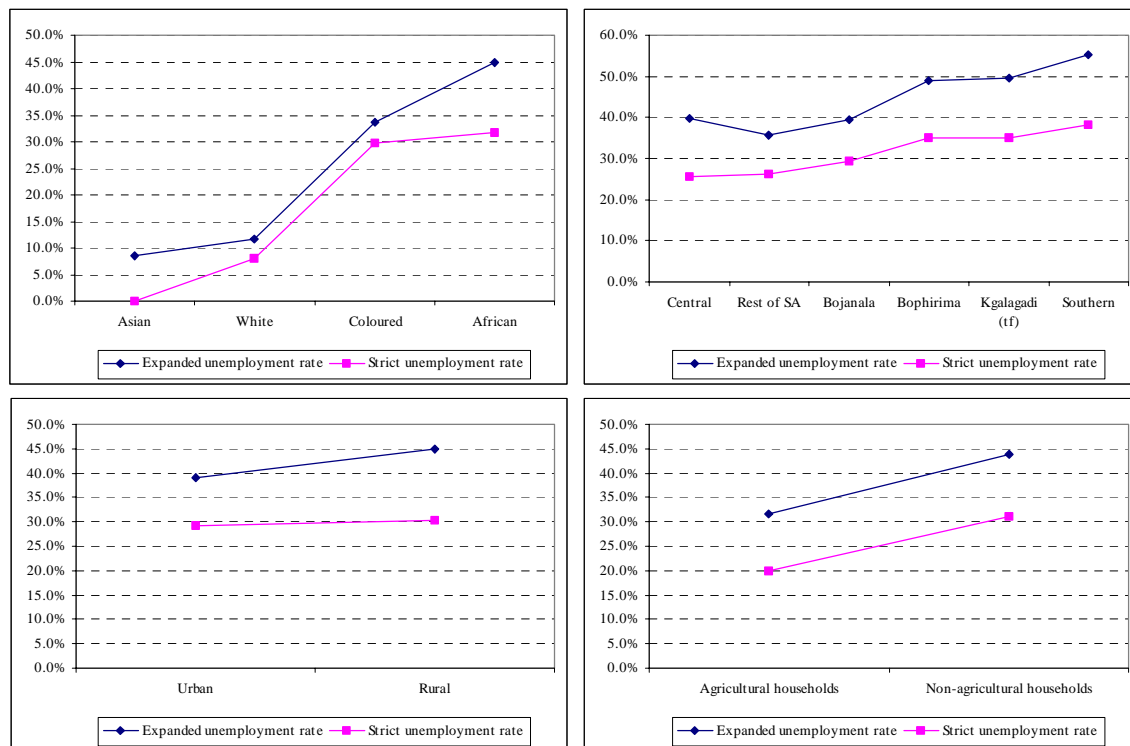
Source: IES/LFS 2000

Statistics South Africa uses the following definition of unemployment as its strict (official) definition. The unemployed are those people within the economically active population who: (a) did not work during the seven days prior to the interview, (b) want to work and are available to start work within a week of the interview, and (c) have taken active steps to look for work or to start some form of self-employment in the four weeks prior to the interview. The expanded unemployment rate excludes criterion (c). The North West has a population of about 3.58 million people of which approximately 849,957 people are employed (see footnote 12). Under the strict (expanded) definition about 2.37 million (2.10 million) people are not economically active, which implies that 362,242 (630,800) people are unemployed. This translates to an unemployment rate of 29.9% (42.6%), which is higher than the national rate of 26.4% (36.3%) for 2000.<sup>14</sup>

<sup>14</sup> The official (expanded) LFS March and September 2003 (SSA, 2004) unemployment figures are 31.2% and 28.2% for South Africa respectively.

In Figure 7 the unemployment rates (official and expanded) are compared for different population subgroups. None of the Asian people are reported as being unemployed. The unemployment rate rises slightly for White people, and then rises rapidly for Coloured and African people. The gap between the strict and expanded rates for Africans (31.6% and 44.9%) is also relatively large, which is indicative of the large numbers of discouraged jobseekers among Africans. A comparison of the municipal areas shows that the difference in unemployment rates between various regions is not large. Only the Central region has an unemployment rate that is lower than the national average. Also interesting is that the strict unemployment rate in urban areas is only marginally less than the rural unemployment rate. However, the gap between the strict and expanded rates in rural areas is much more pronounced, again indicative of long-term unemployment and the large numbers of rural people that have given up searching for jobs. Finally, unemployment is also lower among agricultural households than non-agricultural households, mainly because family members would rather participate in the household's farming activities than do nothing.

Figure 7: Unemployment rates by population subgroups



Source: IES/LFS 2000

A comparison of unemployment rates by race (Asian/Coloured/African and White) and agricultural/non-agricultural households shows that unemployment levels in agriculture are driven mainly by unemployment among Coloured/African workers. The unemployment rate for Coloured/African agricultural workers is also lower than the unemployment rate for

Asian/Coloured/African non-agricultural workers. In fact, most of the unemployment in the North West appears to be driven by unemployment among African/Coloured/Asian non-agricultural workers. An interesting comparison can be made between Figure 8 and Figure 4. The latter shows that poverty is highest among Coloured/African agricultural households, yet unemployment is lower. One possible explanation for this is inaccurate accounting by agricultural households of the value of goods and services (such as food, clothing and housing) received in kind from employers, which leads to an overestimation of poverty rates. However, this does not take away the fact that agricultural wages are often very low compared to non-agricultural wages. This may explain higher employment levels among agricultural households, but often these people can be classified as the 'working poor'.

Figure 8: Unemployment rates by race and agricultural/non-agricultural population



Source: IES/LFS 2000

#### 4. Conclusions

The eastern parts of the North West province lie in close proximity to the relatively affluent metropolitan areas of Johannesburg and Pretoria. Most households (60.6%) live in rural areas, but despite this not many are defined as agricultural households. About 22.4% (broad) or 9.8% (strict) of the population live in agricultural households. Generally speaking there is a fairly large gap between the proportions of households that are strictly and broadly defined as agricultural households, which suggests that most households are involved in agriculture informally and regard it as an additional source of income or food rather than a primary source.

The average person in the North West is slightly worse off than the average South African person if measured in terms *per capita* incomes. White agricultural household incomes appear

to be very high in the North West, even higher than White non-agricultural incomes. In contrast Coloured and African agricultural households earn very low incomes and face higher poverty rates than their non-agricultural counterparts. However, unemployment rates among Coloured and African agricultural households are lower than among non-agricultural households.

As far as inequalities are concerned the preceding discussion suggests that much of the overall inequality is driven by inequalities between racial groups. For agricultural households in particular the high degree of inequality appears to be driven primarily by inequalities in the distribution of land and capital, and to a lesser extent by inequalities in the distribution of wages. Inequality among agricultural households contributes about 30% to overall inequality in the province.

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